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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Sadafuku HAYASHI

Serial No.:	10/748,165	Group Art Unit:	2617
Filed:	December 31, 2003	Examiner:	Julie E. Stein

For: MOBILE COMMUNICATION SYSTEM, RADIO TERMINAL USED THEREFOR, RADIO NETWORK CONTROLLER AND OPERATION CONTROL METHOD THEREFOR

MS Reply Brief - Patents
Honorable Commissioner of Patents
Alexandria, VA 22313-1450

REPLY BRIEF

Sir:

Further to the Examiner's Answer dated November 29, 2006, Appellant respectfully submits this Reply Brief in the above-identified application.

ARGUMENT

Rejection under 35 U.S.C. § 103(a) over Sarkkinen et al. in view of Ericsson

1. The rejection fails as a matter of law:

The Office has not established, in the Final Rejection or the Examiner's Answer, *prima facie* obviousness with respect to the rejected claims 2-3 and 28-32 based on Sarkkinen et al. (U.S. Pat. No. 6,701,155) in view of Ericsson (U.K. pat. app. No. 2 371 179 A). See MPEP 2142:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added.)

The Office has not established *prima facie* obviousness under 35 U.S.C. § 103(a), because the Office has not met the basic criterion of the prior art references teaching or suggesting all of the claim limitations. In addition, the Office has not met the basic criterion of some motivation or suggestion, either in the cited references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or combine the reference teachings. Further, the Office has not met the basic criterion of a reasonable expectation of success.

2. The rejection fails as a matter of fact:

The cited references to Sarkkinen et al. and Ericsson do not teach or suggest all the claim limitations. There is no suggestion or motivation to modify the

references or to combine reference teachings in the prior art or in knowledge generally available to one of ordinary skill in the art. Further, Sarkkinen et al. and Ericsson teach away from the proposed combination.

The Sarkkinen et al. Reference

Sarkkinen et al. does not teach or suggest a communication system, method, or program in which, in response to connection of a radio terminal to a controller associated with a second cell, the count of connected radio terminals maintained by the circuitry for counting in the controller associated with the first cell is decremented and the count in the controller associated with the second cell is incremented.[1]

Sarkkinen et al. discloses a mobile communications system that includes radio network controllers (RNCs) 30, 35 to which radio terminals (UEs 11, 12) connect. Circuitry for maintaining a count of the UEs 11, 12 connected to RNCs 30, 35 is located centrally in a component (SGSN) of the core network (CN 50), not in the RNCs. See, *inter alia*, FIG. 1 of Sarkkinen et al. Sarkkinen et al. does not teach or suggest a controller (RNCs 30, 35) containing "circuitry for counting the number" of connected radio terminals (UEs 11, 12).

The Office alleges that Sarkkinen et al. "teaches" a controller containing circuitry for counting the number of connected radio terminals. Appellant respectfully disagrees.

Significantly, the Office contradicts its statement alleging that Sarkkinen et al. "teaches" a controller containing circuitry for counting, and admits, at least implicitly, that there is no explicit 'teaching' of a controller containing circuitry for counting. Specifically, the Office alleges that Sarkkinen et al. "teaches...each

[1] See claim 28, lines 12-16; claim 29, lines 11-14; and claim 30, lines 13-16.

controller including circuitry for counting the number of radio terminals connected to such controller...." This allegation of a 'teaching' is contradicted, however, by the Office's subsequent explanatory parenthetical, which states: "(it would have been *obvious* to one of ordinary skill in the art at the time the invention was made for the RNCs to count the number of UEs....) (Emphasis added.)"

If the alleged 'teaching' were provided in Sarkkinen et al., there would be no need for the Office to invoke a statement alleging "obviousness." Appellant respectfully submits that Sarkkinen et al. does not so teach, and, by stating that it "would have been obvious" that the RNCs count the number of UEs, the Office recognizes, and, in effect, admits, that Sarkkinen et al. does not *teach* the limitation.

Moreover, the Office has not alleged that a suggestion for this claim limitation can be found in the cited references. Instead, the Office appears to rely on a suggestion from knowledge generally available to one of ordinary skill in the art to supply the missing claim limitation. The Office cannot, however, establish *prima facie* obviousness by relying on knowledge generally available to one of ordinary skill in the art to supply missing claim limitations. Teachings or suggestions of claim limitations must come from the prior art references in order to meet this basic criteria for establishing *prima facie* obviousness.

In particular, Sarkkinen et al. does not *suggest* a controller including the recited circuitry for counting. Stated another way, Sarkkinen et al. does not suggest that "it would have been obvious to one of ordinary skill ... for the RNCs to count the number of UEs."

Sarkkinen et al. teaches that counts of UEs connected to the RNCs are maintained centrally by the SGSN. Therefore, there is no suggestion in Sarkkinen et al. to include the recited circuitry for counting in the RNCs. In its Examiner's

Answer, the Office accepts Appellant's factual interpretation of Sarkkinen et al., set forth above and in the Appeal Brief, and agrees that circuitry for counting is provided centrally in the SGSN. The Office goes on to allege, however, that counting of UEs "could" take place in the RNCs, as well as in the SGSN.

Appellant respectfully submits that the Office's allegation, that UE counts 'could' be kept in the SGSN and the RNCs, is inapposite to the question at hand. At hand is whether the cited references teach or suggest the recited limitation, and whether one of ordinary skill in the art would be motivated, by the cited prior art or knowledge generally available, to modify the RNCs of Sarkkinen et al. to keep counts of UEs (i.e., include the recited circuitry for counting). It is of no moment whether UE counts "could" be kept in the RNCs, as well as in the SGSN.

By the same token, Sarkkinen et al. does not motivate the modifications necessary to successfully achieve the limitation[2]. On the contrary, such a counting functionality in the RNCs would be at least partially redundant to counting already performed by the SGSN, as taught by Sarkkinen et al.

In addition, incorporating the recited circuitry for counting into the RNCs of Sarkkinen et al. would require additional circuitry and components. Appellant respectfully submits, therefore, that knowledge generally available to one of ordinary skill in the art also would not suggest or motivate modifying the RNCs of Sarkkinen et al. to include circuitry for counting[3].

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[2] The Office relies on an alleged "teaching" in Sarkkinen et al. of the circuitry for counting limitation, and has not cited Ericsson as teaching or suggesting the limitation, or as motivating any combination or modifications needed to realize the recited circuitry for counting in Sarkkinen et al. Appellant respectfully urges, in any event, that Ericsson would not remedy such deficiency of Sarkkinen et al., reasons for which are discussed herein.

[3] Recognizing implicitly that Sarkkinen et al. lacks the requisite suggestion or motivation, the Office proposes that modifying Sarkkinen et al. "would allow the RNCs to keep track of the number of UEs in a given cell and thus calculate various network parameters, such as loading." Appellant respectfully notes, however, that the proposed motivation is circular, in that it essentially urges modifying the RNCs of Sarkkinen et al. to include circuitry for counting so that the RNCs will be able to count. (Significantly, other modifications would be needed to enable the RNCs to calculate network parameters, suggestions for which also are lacking.)

Appellant respectfully urges that Sarkkinen et al. contains no hint that the UE count maintained in the SGSN is in any way inadequate to the network's needs, such as might suggest keeping an ancillary count in the RNCs. Instead, one of ordinary skill in the art, reading Sarkkinen et al. as a whole and without hindsight, would understand that the count of UEs kept in the SBSN not only is completely adequate to the network's needs, but also that distinct advantages accrue from maintaining the UE counts in the SGSN.

Indeed, for the reasons set forth above, Sarkkinen et al., and knowledge generally available, teach away from including counting circuitry in the RNCs as being unnecessary, redundant, complex, and costly[4].

Appellant respectfully submits that Sarkkinen et al. does not teach or render obvious Appellant's recited invention.

The Ericsson Reference

Ericsson does not remedy the deficiencies of Sarkkinen et al. Significantly, Ericsson is not cited by the Office as teaching or suggesting the limitation, advanced above as missing from Sarkkinen et al., of the controller circuitry for counting.

Instead, the Office cites Ericsson as providing another limitation, the only limitation admitted by the Office to be missing from Sarkkinen et al., that "in response to connection of the radio terminal to the controller associated with the second cell, the count of radio terminals connected to the controller associated with the first cell is decremented and the count of radio terminals connected to the controller associated with the second cell is incremented."

Ericsson is described by the Office as teaching two RNCs updating each other directly when a UE moves between each (Ericsson, page 4, lines 21-29). Appellant

[4] Ericsson, which is concerned primarily with improving resource economy, also does not suggest, and arguably teaches away from, modifying the RNCs to include additional circuitry.

notes, however, that Ericsson does not teach or suggest that the updates contain any UE count data.

Ericsson is concerned with improving resource economy when passing configuration information from one RNC to another as a mobile terminal moves from cell to cell. For example, as a mobile terminal moves from the control of a first RNC (referred to as a serving RNC (SRNC)) to a second RNC (referred to as a drift RNC (DRNC)), Ericsson teaches that the communications channel configuration allocated to the mobile terminal by the DRNC is sent to the SRNC.

Significantly, the updating procedure performed by the RNCs disclosed in Ericsson does not include UE counts. A UE count is not shown as part of the message structure illustrated in Ericsson. See, for example, the table on page 6, lines 19-20 of Ericsson. Consistent with the lack of any UE count information in the RNC message, Ericsson does not teach or suggest that a UE count is communicated in any way from one controller (RNC) to another.

Instead, Ericsson teaches that the information communicated relates to channel configuration. The channel configuration information indicates, for example, whether flow control information is unique to the DRNC cell, or whether the information is common to all cells. Ericsson does not teach or suggest that a count of the mobile terminals (UEs) is kept, or included in any messages sent, by the RNCs.

Recognizing that Ericsson lacks such a teaching or suggestion, the Office attempts to supply what is missing by asserting that it "would have been obvious to one of ordinary skill in the art at the time of the invention to understand that while the RNCs were updating each other, they would also keep count of the UEs...."

Appellant notes that this teaching or suggestion for the claim limitation alleged by the Office comes not from the prior art references, but from knowledge

generally available to one of ordinary skill in the art. A *prima facie* case of obviousness cannot properly be established in reliance on knowledge generally available to one of ordinary skill in the art to teach or suggest claim limitations.

On the contrary, the prior art references must teach or suggest all the claim limitations. Knowledge generally available to one of ordinary skill in the art can be used to suggest or motivate reference modifications or combinations. Here, however, the Office tries, improperly, to rely on knowledge generally available to teach or suggest limitations recited in Appellant's claims. The missing claim limitations are not taught or suggested in the prior art references.

Further, in order to establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. In this case, there is no such suggestion or motivation in the references themselves. In Ericsson, for example, such a count would be ancillary, at best, to the focus on passing configuration information. In Sarkkinen et al., the UE counts are already kept in the SGSN. Consequently, the Office asserts as motivation that "while the RNCs were updating each other, they would also keep count of the UEs in order to better keep track of various network parameters, such as loading."

As noted above in connection with the discussion related to Sarkkinen et al., such a modification would require changes and additions to the network architecture. Further, the knowledge generally available to one of ordinary skill in the art motivates away from including unnecessary or redundant circuitry and components in network architecture. Moreover, there is no explanation, and it is not readily apparent, how keeping count of the UEs in Ericsson would lead to the RNCs

better keeping track of various network parameters, why the tracking would be "better," how 'better tracking' is to be quantified, and whether the RNCs in Ericsson need to, or should be, tracking the various network parameters. Appellant respectfully submits that, absent some explanation of what constitutes 'better tracking,' one is unable to determine whether the proposed modification would have a reasonable expectation of success.

The Office attempts to bolster its case by alleging that counting is "implicit" in the need to determine whether the count of UEs is "very low." Appellant notes, however, that the UE count data alluded to by the Office actually is a count of "authorized UEs" that is maintained and used by the SGSN, according to the teachings of Sarkkinen et al. Keeping count of the authorized UEs in the RNCs, rather than centrally in the SGSN, would, again, lead to increased complexity and cost in an unnecessary effort to maintain authorized UE counts in a plurality of circuit devices. Moreover, Appellant urges that the determination of whether the number of authorized UEs is 'very low' could be made more efficiently (better tracked) if the counts were kept in the single SGSN, rather than redundantly in each of the RNCs as well.

As noted above, Sarkkinen et al. is deficient with respect to teaching or suggesting all of the claim limitations, including the circuitry for counting recited in the pending claims. Moreover, Appellant notes that Ericsson does not teach or suggest the recited limitation, admitted by the Office to be missing, according to which a UE count is communicated from one RNC to another.

The prior art references to Sarkkinen et al. and Ericsson, taken alone or in combination, do <u>not</u> teach or suggest all claim limitations. Sarkkinen et al. contains no teaching or suggestion of the recited circuitry for counting. (Ericsson also does not teach or suggest the recited circuitry for counting.) Sarkkinen et al. and Ericsson

do not provide the requisite motivation to modify or combine the cited references to provide circuitry for counting as recited in the current claims. Further, rather than motivating, the disclosures of Sarkkinen et al. and Ericsson, and general knowledge in the art, such as cost and efficiency considerations, teach directly away from providing RNCs with the recited circuitry for counting, and for intercommunication of UE counts.

CONCLUSION

In view of the foregoing, Appellant submits that claims 2-3 and 28-32, all the claims presently pending in the application, are patentably distinct over the prior art of record and are allowable, and that the application is in condition for allowance. Such action would be appreciated.

To the extent necessary, Appellant petitions for an extension of time under 37 CFR §1.136.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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